

PATENT ABSTRACTS OF JAPAN

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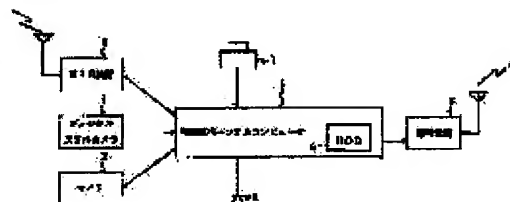
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(54) MULTIMEDIA INFORMATION TERMINAL EQUIPMENT

(57)Abstract:

PROBLEM TO BE SOLVED: To automatically construct multimedia information gathered on the spot into a data base without interposing the manual work of an operator by adding GPS information fetched at the time of gathering the information to the multimedia information.

SOLUTION: The multimedia information of the image information of an object photographed by a digital still camera 1 and audio information recorded by a microphone 2 and the GPS information outputted from a GPS device 3 at the time of gathering the multimedia information are fetched. Then, transmission data for which the simultaneously gathered multimedia information and GPS information are turned to one set are sent out to a communicating party (center) line-connected by a portable telephone 5. Thus, the correspondence of the multimedia information and the GPS information is easily obtained on the data base and the display position on a map of the multimedia information is easily made to correspond from the position coordinate information of the latitude and longitude of the corresponding GPS information.



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CLAIMS

[Claim(s)]

[Claim 1]A multimedia information terminal comprising:

It is a multimedia information terminal which collects multimedia information for creating a beta base where multimedia information collected on the spot and a collection site on a map were matched, and is a portability type information management system.

Image input apparatus which photos a photographic subject.

Voice inclusion apparatus in which speech information is mentioned.

A GPS device which outputs GPS information including coordinate information and a hour entry which were expressed with longitude latitude, Store and connect with an integral type and a mobile communications walkie-talkie to said portability type information management system. A function to incorporate GPS information currently outputted from said GPS device when multimedia information and multimedia information of picture information of a photographic subject photoed with said image input apparatus and speech information recorded by said voice inclusion apparatus are collected, A function which sends out send data which made 1 set multimedia information simultaneously collected to a communications partner which is carrying out the line connection with said mobile communications walkie-talkie, and GPS information.

[Claim 2]The multimedia information terminal comprising according to claim 1:

A function to save GPS information incorporated from picture information incorporated into said portability type information management system from said image input apparatus, speech information incorporated from said voice inclusion apparatus, and said GPS device by a file format. A function which creates each file name of said picture information, speech information, and GPS information using a hour entry of GPS information.

[Claim 3]The multimedia information terminal according to claim 1 or 2 which is provided with the following, automates a series of processings until it transmits to a communications partner from incorporation of multimedia information and GPS information, and is characterized by starting this processing of an automated series by ON operation of said operation switch.

An operation switch for giving instructions to said portability type information management system.

An autodial function which carries out a line connection to a communications partner which was able to determine said mobile communications walkie-talkie beforehand.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to a multimedia information terminal effective in inputting the multimedia information of image data, voice data, etc., in order to create the database of a geographic information system by multimedia information.

[0002]

[Description of the Prior Art]The conventional geographic information system arranges objects, such as a symbol, on a map, and enables it to display these information in piles on a map by matching attached information, picture information, etc. of construction with ID (identifier) of the object. In order to relate attached information and picture information to an applicable position and to display them on a map, It is necessary to match with the page number of map data, or the coordinate information on a map a priori, and to create a database by the data of attached information, such as the symbol and construction name which are displayed on a map, and a contractor name, the picture information which photoed the construction site, etc.

[0003]Conventionally, as for the information on the database built to a database device, the operator had inputted many of data other than map data manually. As shown in drawing 7, a symbol is specifically arranged at the place which is equivalent to a construction site on the map displayed using the geographic information system, and ID of this symbol is registered into a symbol list. Each file name is decided and the graphics file which saves the image data of the attached information file which saves the attached information of a construction site, or a construction site together with registration of a symbol is registered into a database. And the information which shows the whereabouts of the graphics file in which the photographed image data of the attached information file in which the attached information of the construction site is stored, or the construction site concerned is stored is made to correspond to symbol ID, and is registered into a symbol list. Speech information recorded together with photography other than image data on the spot can be made into a file format, and it can match with symbol ID, and can also register with a database.

[0004]To arrange the image data corresponding to the map top of a geographic information system, etc. in piles, an operator needs to choose the symbol arranged on a map and it is necessary to give arrangement instructing, such as image data. The graphics file, attached information file, and speech information file which use ID of the selection symbol concerned as a key, and correspond from a database are taken out, and the contents of the graphics file and the attached information file are displayed on a symbol position, and voice response of the speech information of the speech information file is carried out to timely.

[0005]

[Problem(s) to be Solved by the Invention]However, when the multimedia information (a picture, a sound) collected on the spot is registered into the database of a geographic information system, Since it depended for the complicated work which arranges a symbol in the applicable position on a

map, and matches information with it on the handicraft of the operator, workability was not necessarily good, and in order to create the database of the large area where the amount of input increases, a huge labor and time were required.

[0006] This invention was made in view of the above actual condition, and an object of this invention is to provide the multimedia information terminal which can build the multimedia information collected on the spot in a database automatically without the handicraft of an operator intervening.

[0007]

[Means for Solving the Problem] This invention provided the following means to achieve the above objects. This invention is a multimedia information terminal which collects multimedia information for creating a beta base where multimedia information collected on the spot and a collection site on a map were matched. Image input apparatus in which this multimedia information terminal photos a portability type information management system and a photographic subject, An integral type stores, and connects and constitutes voice inclusion apparatus in which speech information is mentioned, a GPS device which outputs GPS information including coordinate information and a hour entry which were expressed with longitude latitude, and a mobile communications walkie-talkie. A function to incorporate into it GPS information currently outputted from said GPS device when multimedia information and multimedia information of picture information of a photographic subject photoed with said image input apparatus and speech information recorded by said voice inclusion apparatus are collected in a portability type information management system, It has a function which sends out send data which made 1 set multimedia information simultaneously collected to a communications partner which is carrying out the line connection with said mobile communications walkie-talkie, and GPS information.

[0008] Since GPS information incorporated into multimedia information at the time of the information gathering concerned is added according to this invention, Even if it does not map an object which can take correspondence with multimedia information and GPS information easily on a database, and expresses position information on a map, A display position on a map of multimedia information can be easily matched from position coordinate information of longitude latitude of corresponding GPS information. Therefore, a database can be created only by saving 1 set of multimedia information and GPS information which were transmitted from a multimedia information terminal as it is.

[0009] This invention is provided with the following.

A function to save GPS information incorporated from picture information incorporated into a portability type information management system from said image input apparatus, speech information incorporated from said voice inclusion apparatus, and said GPS device by a file format. A function which creates each file name of said picture information, speech information, and GPS information using a hour entry of GPS information.

According to this invention, a meaning can be decided on, without producing duplication, since a file name of picture information, speech information, and GPS information is decided using a hour entry of GPS information.

[0010] In a system which two or more multimedia information terminals exist, and registers information from these terminal units into a database device of one center. A file name can be decided to be a meaning, without producing duplication, even if collection will completely be performed by two or more multimedia information terminals at the time, if a hour entry and a terminal number of GPS information are used.

[0011] However, since it is thought that it does not almost have actually that collection is completely performed at the time with two or more multimedia information terminals although a theory top is possible, but at least a hour entry of GPS information can fully avoid duplication of a file name.

[0012] An operation switch for this invention to give instructions to a portability type information management system, It had an autodial function which carries out a line connection to a communications partner which was able to determine said mobile communications walkie-talkie beforehand, and a series of processings until it transmits to a communications partner from

incorporation of multimedia information and GPS information by ON operation of said operation switch were automated.

[0013]

[Embodiment of the Invention] Hereafter, an embodiment of the invention is described. Drawing 1 shows the composition of the multimedia information terminal of this embodiment. This multimedia information terminal, GPS (Global Positioning System) which receives position information etc. from the digital still camera 1 which inputs the picture of the spot, the microphone 2 in which a sound is mentioned at the spot, and a satellite as the incorporation and the storage of the device 3 and multimedia information. It has composition which stored the cellular-phone 5 grade which transmits the functioning portability type personal computer (hereafter referred to as "portability type PC") 4, and multimedia information to the accommodating case at the integral type. However, the digital still camera 1 and the microphone 2 are connected to portability type PC4 via a code.

[0014] The digital still camera 1 changes into a general video signal the color image information of the photographic subject picturized with the image sensor which is provided with the stroboscope and consists of CCD, and outputs it. It enables it to control the photographing operation of this digital still camera 1 also from portability type PC4. The microphone 2 changes the sounds collected on the spot into a general audio signal, and outputs them. Turning on and off of the microphone 2 enables it to operate an operator with the switch formed in the microphone 2. Collection of multimedia information is performed by these digital still cameras 1 and the microphone 2 on the spot.

[0015] GPS device 3 can acquire longitude latitude information, when three dispatch electric waves of a GPS Satellite are received, and when four or more pieces receive, it can acquire altitude information further. With GPS device 3, from longitude latitude information, time information, etc., movement speed and the move direction are calculated and it outputs periodically in longitude latitude information and the date information of the Greenwich time, and a format predetermined together. The thing of a type connectable with portability type PC4 with a PCMCIA card is used as GPS device 3, and longitude latitude information, the Greenwich date information, movement speed information, and move direction information are periodically outputted to portability type PC4.

[0016] HDD6 for information storing for carrying out the temporary storage of the GPS information incorporated from the multimedia information and GPS device 3 which are incorporated into portability type PC4 from the digital still camera 1 and the microphone 2 by a file format is built in. The operation switch 7 for an operator to input the trigger of a series of processings until it transmits in order to register with portability type PC4 to the database later mentioned from collection of multimedia information is connected, The earphone 8 used as the voice output part of composite tone which tells the processing situation of the processing of a series to an operator is connected.

[0017] The line connection of the cellular phone 5 can be carried out to the workstation by the side of a center by the autodial function of portability type PC4. Portability type PC4 reads the multimedia information and GPS information which were stored in HDD6 for information storing, and they are transmitted to the workstation by the side of a center via the telephone network 9.

[0018] Drawing 2 is a key map showing the relation of two or more multimedia information terminals and the center which were carried by the worker who is present in each spot. The workstation 11 and the database device 12 are installed in the center 10. The database of a geographic information system is built by the database device 12. A geographic information system will be provided by starting the software of the geographic information system installed in the workstation 11.

[0019] Drawing 3 shows the database structure of the geographic information system built by the database device 12. The file of the file management data for managing GPS information files and these files other than the file which saved map data, the graphics file which saved the image data collected at the spot, and the speech information file which saved the sounds collected at the spot exists.

[0020]The contents of processing of the multimedia information terminal constituted as mentioned above are explained. This multimedia information terminal is shouldered on the operator which moves at the spot, and moves with an operator, and collection of multimedia information is performed at each spot. If an operator issues directions of collection of multimedia information to portability type PC4, portability type PC4 will read GPS information (present longitude latitude information, Greenwich date information, movement speed information, and move direction information) from the COM port to which GPS device 3 was connected. This GPS information incorporated from GPS device 3 is saved in a predetermined region temporarily until a file format is used and a file name is set up.

[0021]On the other hand, an operator pushes the switch of the digital still camera 1, in order to copy the situation of this spot in a photograph. As a result, the color image data of the photographic subject picturized with the digital still camera 1 is changed into a color video signal, and is sent to portability type PC4. Portability type PC4 is saved in a predetermined region temporarily until it changes into digital image data the color video signal for one frame inputted from the digital still camera 1 and a file name is set up in the form of a graphics file.

[0022]When a sound reports the situation of this spot, an operator makes the microphone 2 one, and an operator utters it itself, and it inputs speech information. The speech information which collected the sound with the microphone 2 is changed into an audio signal, and is sent to portability type PC4.

[0023]Portability type PC4 is saved in a predetermined region temporarily until it changes into the voice file of form which cried [which is inputted from the microphone 2] with the sound source which a synthesizer board etc. use in one voice and a file name is set up.

[0024]The file name of the three above-mentioned files is created by the file name automatic creation function of portability type PC4. The file name automatic creation function of portability type PC4 generates a directory name and a file name automatically in accordance with the rule of the following which uses a terminal number and GPS information, in order to decide these three file names to be meaning.

[0025]— Time minute second second .XXX of the character string which is time minute second second .XXX at the time of ¥ABYYMMDD¥ and which was inserted by ¥ – ¥ is a file name at a directory name and the time. As for the information gathering moon and DD, an information gathering year and MM are [the terminal number and YY which are multimedia information terminals as for AB / a part for information gathering time and **** of a part for information gathering time and a part] information gathering time seconds at the time of an information gathering day and the time. ".XXX" is ".GPS" or ".JPG" or, and "WAV", ".GPS" is set to the file of the GPS information from GPS device 3, ".JPG" is set to the file of the picture information from the digital still camera 1, and ".WAV" is set to the file of the speech information from the microphone 2. For example, in the graphics file created with the multimedia information terminal of terminal-number #1, it is [— The file name of time minute second second .JPG] will be automatically set up at the time of ¥#1YYMMDD¥.

[0026]Thus, each created file name is attached to a respectively corresponding GPS information file, picture information file, and speech information file, and it stores in HDD6 for information storing. If the GPS information incorporated at multimedia information and the collection spots collected on the spot is stored in HDD6 for information storing by a file format, a telephone line will be connected to the workstation 11 of a center with the cellular phone 5. the cellular phone 5 — a works — after connecting with TETESHON 11, the file of multimedia information and the file of GPS information which are stored in HDD6 for information storing are transmitted.

[0027]Drawing 4 shows the contents of the data transmitted to a center from a multimedia information terminal by one collection of multimedia information. As shown in the figure, the send data which comprises a directory name, a file name, and a file content part for every file is transmitted via the cellular phone 5.

[0028]In the center 10, if send data is received from multimedia information terminal #1-#4 of the spot, it stores in the database device 12 as a GPS information file, a graphics file, and a speech information file as it is. At this time, file management data as taken out the directory name and file name of each file from received data and shown in drawing 5 can be created. Each file name of the GPS information collected almost simultaneous at the same spot, picture information, and speech information is memorized as the same record. When multimedia information is collected with the same terminal unit at two or more spots on the same day, although they differ in a record, they are placed under the same directory.

[0029]Multimedia information and the on-site position on a map can be matched without arranging a symbol on the map of a geographic information system by using the database created as mentioned above. If the GPS information file registered into the database is opened, the position information on the map by longitude latitude will be registered, The graphics file and speech information file which save image data and speech information collected in the position registered into the GPS information file can be immediately searched from file management data.

[0030]Even if it does not use file management data, it may be made to take out the graphics file and voice file of the same file name (however, only the ends ".XXX" differ) as the GPS information file concerned, applying direct retrieval to a database.

[0031]Therefore, it becomes possible to match with the applicable position on a map the picture and sound which could pinpoint the position on a map and were collected by the absolute coordinate information of a GPS information file at the spot concerned, and to display them.

[0032]In the above explanation, although authorized personnel were performing the digital still camera 1 in the spot, and easy operation of the microphone 2, the shutter operation of a camera can be interlocked with and a database can be created with a perfect automatic.

[0033]The processing for performing from incorporation, such as multimedia information, to transmission in the center by one operation according to the flow chart of drawing 6 is explained. ON operation of the operation switch 7 is carried out instead of pushing a shutter release, after authorized personnel have established the digital still camera 1 to a photographic subject. If one [the operation switch 7], portability type PC4 will read GPS information (present longitude latitude information, Greenwich date information, movement speed information, and move direction information) from the COM port to which GPS device 3 was connected, and it will create the file of this GPS information. The ON operation of the operation switch 7 is interlocked with, motion control of the digital still camera 1 is carried out from portability type PC4, and a photographic subject is picturized. The video signal inputted from the digital still camera 1 is changed into the image data of digital data, and a graphics file is created after carrying out coding compression with a JPEG system. After the ON operation of the operation switch 7 occurs, speech information is recorded over about 10 seconds, and a speech information file is created.

[0034]Voice response is carried out [sound / to the effect "collection of multimedia information was completed"] from the earphone 8 in the place which collected GPS information, picture information, and speech information and where file creation was performed using the synthesizer board built in portability type PC4. The speech information which carries out voice response from the earphone 8 is beforehand saved in portability type PC4 in the form of the speech information file.

[0035]Portability type PC4 creates a directory name and a file name automatically in accordance with the rule described above about three collected files, GPS information, picture information, and speech information, attaches a directory name and a file name to each file, and stores them in HDD6 for information storing.

[0036]When three files, GPS information, picture information, and speech information, were stored in HDD6 for information storing, voice response is carried out [sound / to the effect "the collected GPS information, picture information, and speech information are transmitted to a center"] from the earphone 8.

[0037]The telephone number of the workstation 11 is dialed [4 / portability type PC] up from the cellular phone 5 using an autodial function, and it carries out the line connection of the cellular phone 5 to the workstation 11. The telephone number of the workstation 11 is saved beforehand portability type PC4. After a circuit connects with the workstation 11, portability type PC4 reads the GPS information and multimedia information which are stored in HDD6 for information storing, and it transmits to the workstation 11 from the cellular phone 5.

[0038]It transmits, when a telephone is not connected to the workstation 11, time is set and retried and a circuit is connected. Since according to such an embodiment the GPS information which included the absolute coordinate information of longitude latitude simultaneously is incorporated when multimedia information, such as picture information and speech information, is collected at the spot, A database can be created automatically, without mapping an object which expresses position information on a map, if matching with multimedia information and GPS information is taken on the database. Matching with the multimedia information on a database and GPS information can be easily associated automatically by a file name etc., without a human system intervening.

[0039]Since the file name was automatically created from the Greenwich date information and the terminal number which were contained in GPS information when multimedia information was separately kept by the file format, Each multimedia information can be decided on at a meaning, and the time and effort which authorized personnel input on the spot can also be saved.

[0040]Since all are interlocked and it enabled it to operate multimedia information only by one operation switch, without operating each input device, the burden about multimedia information collection of authorized personnel is substantially mitigable. And since processing lapse was announced from the earphone in the middle of a series of operations, authorized personnel can check whether it is operating normally.

[0041]In the above explanation, although the cellular phone is used as a mobile communications walkie-talkie, other apparatus, such as PHS, can also be used. within the limits which this invention is not limited to the above-mentioned embodiment, and does not deviate from the gist of this invention — various — modification — it is feasible.

[0042]

[Effect of the Invention]Without mapping an object which expresses position information on a map according to this invention, as a full account was given above, A database can be automatically created only by saving the multimedia information collected on the spot as they are, and the database of a geographic information system can be created easily. Since the file name can be determined as a meaning without duplication and authorized personnel do not need to specify each time when saving multimedia information and GPS information by a file format, the workability of collection of multimedia information and the authorized personnel at the time of storing is improvable by leaps and bounds. Since only one operation switch is required, it can ease authorized personnel's burden substantially that authorized personnel intervene by a series of processings from collection of multimedia information to transmission.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]It is a functional block diagram of the multimedia information terminal concerning an embodiment of the invention.

[Drawing 2]It is a key map showing the relation between two or more multimedia information terminals and a center.

[Drawing 3]It is a figure showing the file organization of a database device.

[Drawing 4]It is a figure showing the example of send data.

[Drawing 5]It is a figure showing the data arrangement configuration of file management data.

[Drawing 6]It is a flow chart at the time of automating a series of processings from collection of multimedia information to transmission.

[Drawing 7]It is a key map showing database creation while an object which expresses position information on a map is mapped.

[Description of Notations]

- 1 -- Digital still camera
- 2 -- Microphone
- 3 -- GPS device
- 4 -- Portability type PC
- 5 -- Cellular phone
- 6 -- HDD for information storing
- 7 -- Operation switch
- 8 -- Earphone
- 9 -- Telephone network
- 10 -- Center
- 11 -- Workstation
- 12 -- Database device

[Translation done.]

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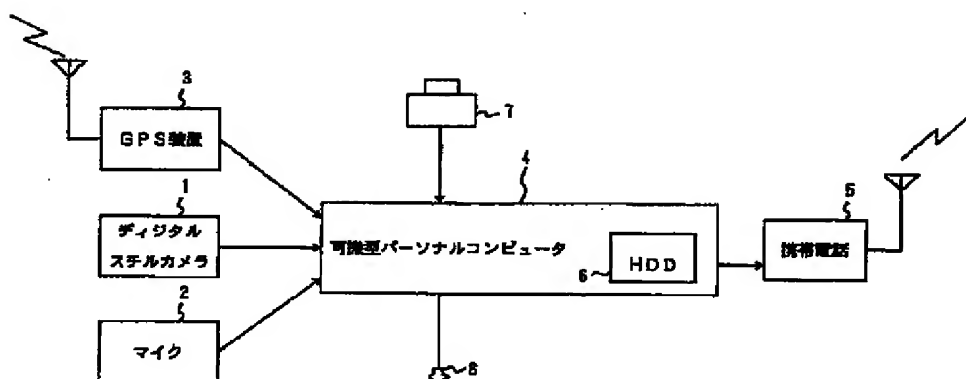
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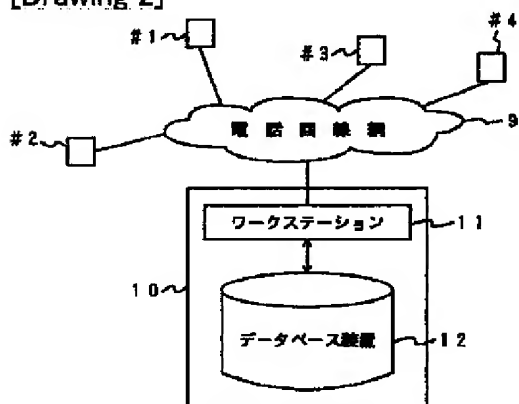
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DRAWINGS

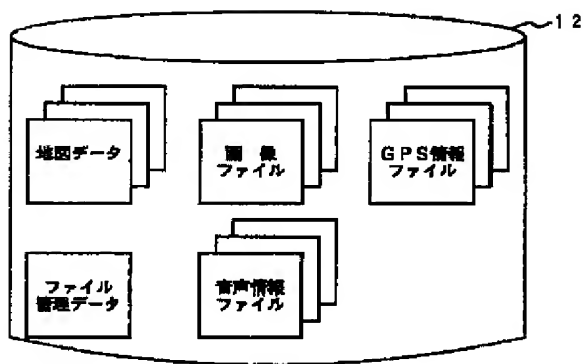
[Drawing 1]



[Drawing 2]



[Drawing 3]



[Drawing 4]

(a)

ディレクトリ名	GPS情報ファイル名	GPS情報テキストファイル内容部
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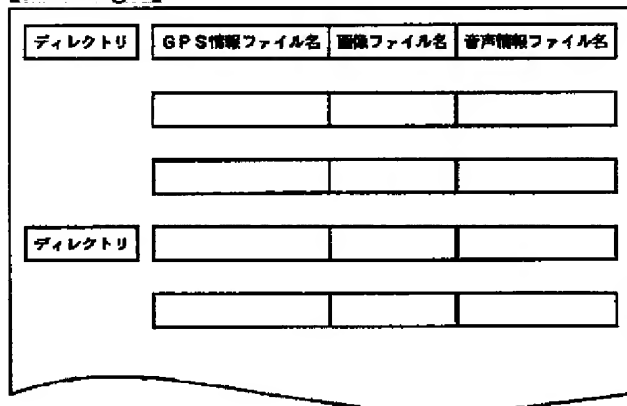
(b)

ディレクトリ名	画像ファイル名	画像ファイル内容部
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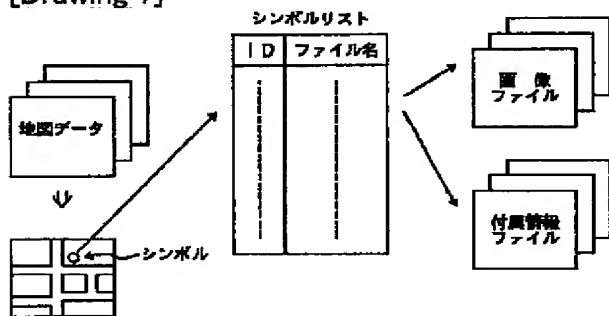
(c)

ディレクトリ名	音声情報ファイル名	音声情報ファイル内容部
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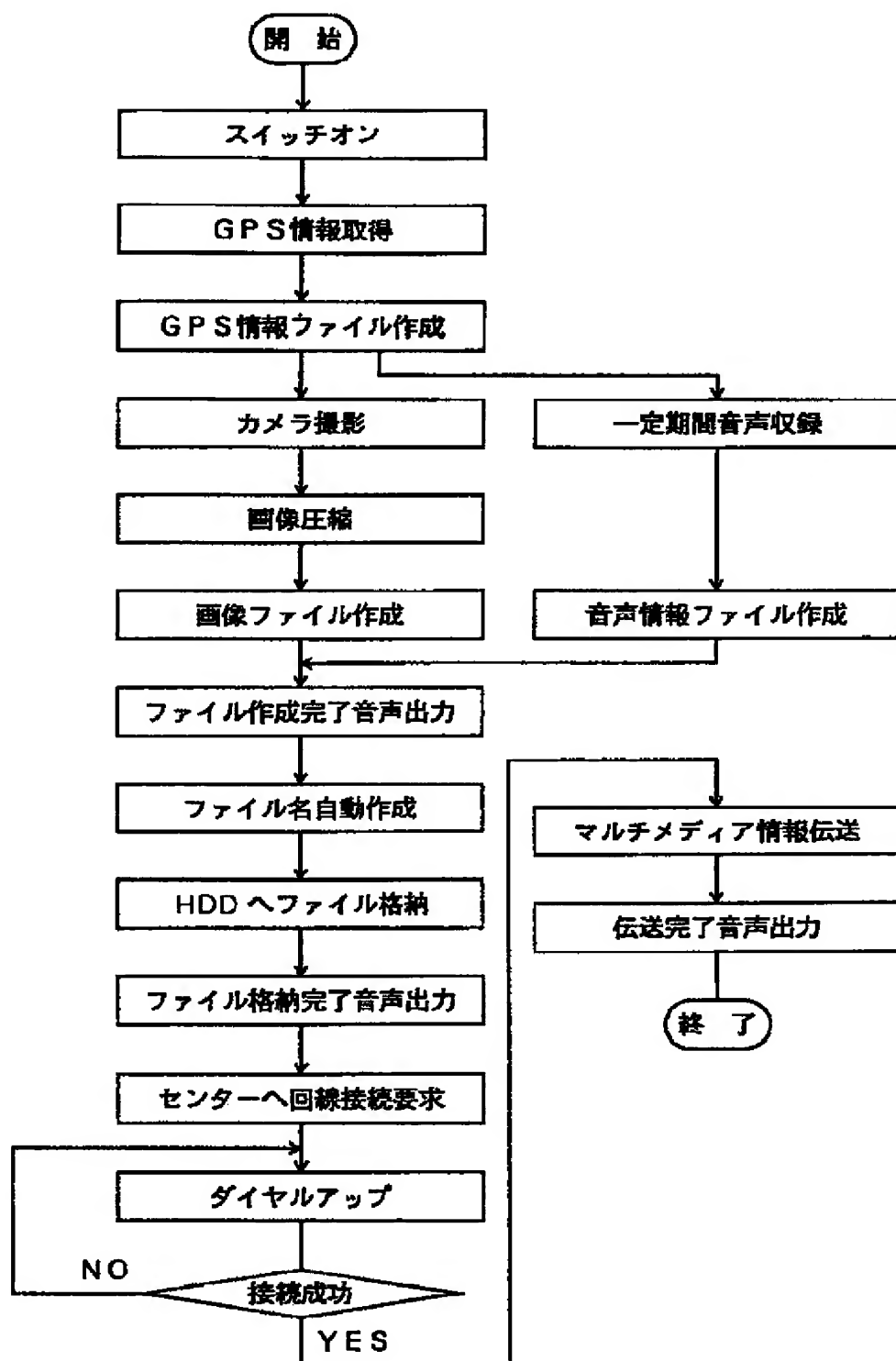
[Drawing 5]



[Drawing 7]



[Drawing 6]



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CORRECTION OR AMENDMENT

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G06F 13/00 354 Z

G09B 29/00 A

G06F 15/40 370 C

G06F 15/40 370 G

G06F 15/403 310 Z

[Written amendment]

[Filing date]October 30, Heisei 15 (2003.10.30)

[Amendment 1]

[Document to be Amended]Specification

[Item(s) to be Amended]Claim

[Method of Amendment]Change

[The contents of amendment]

[Claim(s)]

[Claim 1]

It is a multimedia information terminal which collects multimedia information for creating a beta base where collected multimedia information and a collection site on a map were matched,

A portability type information management system, image input apparatus which photos a photographic subject, voice inclusion apparatus in which speech information is mentioned, a GPS device which outputs GPS information including coordinate information and a hour entry which were expressed with longitude latitude, and a mobile communications walkie-talkie are stored and connected to an integral type,

A multimedia information terminal comprising:

A function to incorporate GPS information currently outputted to it from said GPS device when multimedia information and multimedia information of picture information of a photographic subject photoed with said image input apparatus and speech information recorded by said voice inclusion apparatus are collected to said portability type information management system.

A function which sends out send data which made 1 set multimedia information simultaneously collected to a communications partner which is carrying out the line connection with said mobile communications walkie-talkie, and GPS information.

[Claim 2]

In the multimedia information terminal according to claim 1,

A multimedia information terminal comprising:

A function to save GPS information incorporated from picture information incorporated into said portability type information management system from said image input apparatus, speech information incorporated from said voice inclusion apparatus, and said GPS device by a file format.

A function which creates each file name of said picture information, speech information, and GPS information using a hour entry of GPS information.

[Claim 3]

In the multimedia information terminal according to claim 1 or 2,

It has an autodial function which carries out a line connection to a communications partner which was able to determine beforehand an operation switch and said mobile communications walkie-talkie for giving instructions to said portability type information management system,

A multimedia information terminal automating a series of processings until it transmits to a communications partner from incorporation of multimedia information and GPS information, and starting this processing of an automated series by ON operation of said operation switch.

[Claim 4]

A communication wireless section which transmits and receives a signal via a wireless circuit,

An image-input-apparatus part for photoing a photographic subject,

A voice inclusion apparatus part for recording speech information,

A GPS device part which outputs GPS information including coordinate information and a hour entry which were expressed with longitude latitude,

Said information processing section which creates send data which associated picture information of a photographic subject photoed in said image-input-apparatus part, speech information recorded by said voice inclusion apparatus, and GPS information currently outputted from a GPS device, and transmits to a communications partner via said mobile communications wireless section

A multimedia information terminal characterized by preparation *****.

[Claim 5]

In the multimedia information terminal according to claim 4,

An operation switch part is provided in said multimedia information terminal,

A multimedia information terminal automating a series of processings until it transmits to a communications partner from incorporation of said picture information, said speech information, and said GPS information, and starting this processing of an automated series by ON operation of said

operation switch part.

[The amendment 2]

[Document to be Amended]Specification

[Item(s) to be Amended]0012

[Method of Amendment]Change

[The contents of amendment]

[0012]

An operation switch for this invention to give instructions to a portability type information management system, It had the autodial function which carries out a line connection to the communications partner which was able to determine said mobile communications walkie-talkie beforehand, and a series of processings until it transmits to a communications partner from incorporation of multimedia information and GPS information by the ON operation of said operation switch were automated.

The communication wireless section where this invention transmits and receives a signal via a wireless circuit, The image-input-apparatus part for photoing a photographic subject, and the voice inclusion apparatus part for recording speech information, The GPS device part which outputs GPS information including the coordinate information and the hour entry which were expressed with longitude latitude, The send data which associated the picture information of the photographic subject photoed in said image-input-apparatus part, the speech information recorded by said voice inclusion apparatus, and the GPS information currently outputted from the GPS device is created, and it has said information processing section which transmits to a communications partner via said mobile communications wireless section.

According to this invention, since the incorporated picture information and the GPS information incorporated into speech information at the time of the information gathering concerned add and send data is created, the picture information and speech information which were incorporated, and the display position on a map can be matched easily.

[Amendment 3]

[Document to be Amended]Specification

[Item(s) to be Amended]0032

[Method of Amendment]Change

[The contents of amendment]

[0032]

In the above explanation, although authorized personnel were performing easy operation of the digital still camera 1 in the spot, and the microphone 2, the shutter operation of a camera can be interlocked with and a database can be created with a perfect automatic.

[Amendment 4]

[Document to be Amended]Specification

[Item(s) to be Amended]Explanations of letters or numerals

[Method of Amendment]Change

[The contents of amendment]

[Description of Notations]

- 1 — Digital still camera
- 2 — Microphone
- 3 — GPS device
- 4 — Portability type PC
- 5 — Cellular phone
- 6 — HDD for information storing
- 7 — Operation switch
- 8 — Earphone
- 9 — Telephone network

- 10 — Center
- 11 — Workstation
- 12 — Database device

[Translation done.]